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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,368	06/03/2002	Xiaoxun Zhu	108-085USAC00	2295
7590 03/12/2004			EXAMINER	
Thomas J Perkowski Soundview Plaza 1266 East Main Street Stamford, CT 06902			WALSH, DANIEL I	
			ART UNIT	PAPER NUMBER
			2876	

DATE MAILED: 03/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/009,368

Applicant(s)

ZHU ET AL.

Examiner

Daniel I Walsh

Art Unit

2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-9 and 13-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 5-9 and 13-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7-03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1. Claim 5 and 7 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,457,642. Although the conflicting claims are not identical, they are not patentably distinct from each other because the application is broader recitation than the Patent.

For example, in claims 5 and 7 of the present claimed invention and claim 1 of the '642 Patent, the Applicant claims:

i) "...scanning subsystem....package dimensioning subsystem" (see claim 5) and "...holographic scanning..." (see claim 7), whereas in the '642 Patent the Applicant claims "...scanning tunnel subsystem...package dimensioning subsystem..." (see claim 1) and "...holographic laser scanning" (see claim 2).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 17-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 17 recites the limitation ""the buffered range data map" in line 5 and claim 18 recites "the indices (m,n)" in line 3. There is insufficient antecedent basis for these limitation in the claims.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by Woodworth (US 5,699,161).

Woodworth teaches a scanning subsystem for reading barcodes on packages entering the system so as to identify the scanned packages (FIG. 1, element 47) and a package dimensioning system for capturing information about the dimensions of each packages as its transported past the system (abstract).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 6, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodworth, as applied to claim 5 above.

The teachings of Woodworth have been discussed above. It is well known and conventional to use lasers to dimension packages (see Wurz et al., for example). Woodworth teaches laser sources 30/32 for capturing profiles of the space above the conveyor (FIG. 15A-15D). Though Woodworth is silent to a contour tracing method to extract package dimension data, Woodworth teaches captured profiles from which package dimension data is extracted. The examiner also notes that the capturing of 2-D profiles is well known in the art (see Midgal et al., which teaches the generation of a 3-D model by collection of 2-D profile data).

Re claim 17, though the prior art is silent to buffering data that has been filtered/smoothed/etc., but teaches the buffering of data to be processed, the Examiner notes that it is well within the skill in the art to process data before buffering or after buffering, as both

means produce processed data for object identification/dimensioning. The processing of data “on the fly” is well known and conventional for reducing the time required.

Re claim 18-19, Woodworth teaches finding the corners of the object by processing points (col 14, lines 3+) to aid in dimensioning the object. Re claim 20, Woodworth teaches detecting corner points as discussed above. The examiner notes that the intended use of claim 20 (“in order to...”) is not patentable.

Further, though the prior art is silent to tracing contours to detect contours in order to extract dimension data, the Examiner notes that the prior art teaches the capturing of 2-D data maps, which is interpreted to include contour tracing to detect contours of the package to generate dimension data.

6. Claims 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodworth, as applied to claim 5 above, further in view of Ramsden et al. (US 5,656,799), as cited by the Applicant.

The teachings of Woodworth have been discussed above.

Re claim 7, Woodworth is silent to the use of a holographic scanning mechanism.

Re claim 7, Ramsden et al. teaches a holographic scanner (15B).

At the time the invention was made, it would have been obvious to an artisan of ordinary skill in the art to combine the teachings of Woodworth with those of Ramsden et al.

One would have been motivated to do this in order to have an alternative measuring means that is well known and conventional in the art for predictable use. Such modification would have been well within the ordinary skill in the art.

Re claim 13, Ramsden et al. teaches a LADAR based system, as discussed above, but is silent to a housing/conveyor. However, it is well known and conventional in the art to use a tunnel/housing for various reasons, not limited to, but including, reducing ambient light.

At the time the invention was made, it would have been obvious to an artisan of ordinary skill in the art to combine the teachings of Woodworth with those of Ramsden et al.

One would have been motivated to do this in order to use a more versatile/robust LADAR based system.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Woodworth, as applied to claim 5 above, further in view of Stringer et al. (US 5,831,737), as cited by the Applicant.

The teachings of Woodworth have been discussed above. Woodworth teaches the measuring of the speed of the conveyor by using a tachometer.

Woodworth is silent to measuring the conveyor speed by a pair of amplitude modulated laser beams projected from different angles.

Stringer et al. teaches the measuring of conveyor speed through light emitting/receiving pairs 34-40. Though Stringer is silent to the beams being lasers projected at different angles, at the time the invention was made, it would have been obvious to an artisan of ordinary skill in the art to replace the light beams with laser beams, since it is well known that laser beams produce more intense light that is desirable in high speed systems. Further, placing the beams at different angles is well known in the art when measuring the speed of a moving surface (see Grebe US 5,339,196) and the use of amplitude modulated lasers to reject ambient light is also well known, Dickson et al. (US 6,193,157), and further since it is well known to use modulated lasers for

reasons including extending the reading range of bar codes, to accurately determine the distance to barcode-bearing objects, and to reject ambient light, etc.

At the time the invention was made, it would have been obvious to an artisan of ordinary skill in the art to combine the teachings of Woodworth with those of Stringer et al.

One would have been motivated to do this to have an accurate means of measuring the speed, as is well known and conventional in the art.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Woodworth, as applied to claim 5 above, further in view of Barkan et al. (EP 0 492 065).

The teachings of Woodworth have been discussed above.

Woodworth is silent to the lasers having multiple wavelengths to sense packages with a wide range of reflectivity characteristics.

It is well known in the art to scan with multiple wavelengths. Specifically, Barkan et al. teaches a dual source reader (FIG. 1) including two different wavelength sources.

At the time the invention was made, it would have been obvious to an artisan of ordinary skill in the art to combine the teachings of Woodworth with those of Barkan et al.

One would have been motivated to do this in order to increase the depth of field of the scanner, enable scanning of high density data, discriminate among color variations, scan packages of different reflective characteristics, etc. as is well known and conventional in the art. Further, the examiner notes the intended use recited in claim 8 is not patentable.

9. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodworth/Ramsden et al., as applied to claim 13 above, further in view of Wurz et al. (US 5,969,823).

The teachings of Woodworth/Ramsden et al. have been discussed above.

Woodworth/Ramsden et al. are silent to the capturing of a row of raw range information that is referenced with respect to a polar type coordinate system embedded in the LADAR system.

Wurz et al. teaches a dimensioning system where a light source generates a light that spans the width of the conveyor in cooperation with a line scan camera that tracks the beam and receives images and outputs a signal that is processed to compute an image (dimensioned) of the object (abstract). Though Wurz et al. is silent to a polar type coordinate system and capturing a row of raw data, it is understood that a coordinate system is used in order to dimension an object, and the selection of a polar type/Cartesian/etc. is well within the skill in the art. Finally, though Wurz et al. is silent to a row of raw range information, it is interpreted by the examiner that line data is retrieved and processed by the computer, which is broadly interpreted to include raw row range data, data that is processed for a final dimension. Further, the examiner notes that in package recognition/barcode scanning, the scanning and outputting of data per line/row is well known and conventional in the art, and there is an obvious expedient (see Wurz et al.).

Re claim 15, Woodworth teaches the use of buffers 1350 to store range data. Though Woodworth is silent to the use of line buffers, line buffers are well known and conventional in the art, and such modification here, would be an obvious expedient.

At the time the invention was made, it would have been obvious to an artisan of ordinary skill in the art to combine the teachings of Woodworth/Ramsden et al. with those of Wurz et al.

One would have been motivated to do this as a well-known and conventional means of dimensioning/imaging an object, based on its reflected illumination.

Re claims 15-16, the Examiner notes that window-type convolution kernels/low pass filters, edge detectors, filters etc. are well known and conventional in processing. One of ordinary skill in the art would be motivated to use such means to generate accurate image data, as desired in the art, using means that are well known and conventional.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Kim (US 5,978,512), Zhu et al. (US 2002/0014533), Gamache et al. (US 5,193,120), and McQueen (US 6,674,904).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Walsh whose telephone number is (571) 272-2409. The examiner can normally be reached between the hours of 7:30am to 4:00pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on (571) 272-2398. The fax phone numbers for this Group is (703) 308-7722, (703) 308-7724, or (703) 308-7382.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [daniel.walsh@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set for the in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



DW
3/2/04

**THIEN M. LE
PRIMARY EXAMINER**